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PHOTOGRAPHIC INTERPRETATION REPOR



COMMUNICATIONS FACILITIES SKRUNDA AND OLENEGORSK AREAS USSR

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DECEMBER 1967
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PHOTOGRAPHIC INTERPRETATION REPORT

COMMUNICATIONS FACILITIES SKRUNDA AND OLENEGORSK AREAS **USSR**

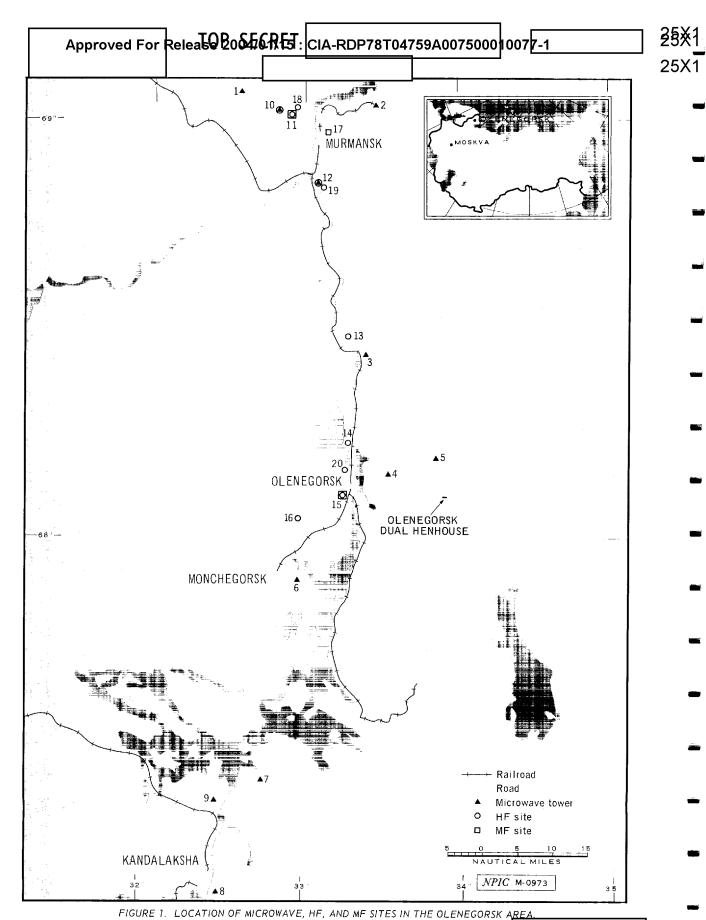
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INTRODUCTION

This report is in answer to NSA requirement NSA/SOC/R62-67, which requests a search and description of all communications antennas within a 50-nautical-mile (nm) radius of the Skrunda and Olenegorsk HEN HOUSE antennas. This search and report are part of a continuing effort to isolate the communications antennas which are used to support the HEN HOUSE antennas cited. A substantial number of communications antennas, including 9 microwave towers, are described in this report. It has not been possible to identify any physical connections between the communications antennas or the microwave towers and the HENHOUSE antennas on available photography,

All of the communications facilities identified during this search are described herein except those adequately described in previous NPIC reports.

MICROWAVE COMMUNICATIONS FACILITIES

Eleven microwave towers were identified in the area between Kandalaksha and Murmansk. Nine of these facilities are briefly described in this report and all of them are keyed to Figure 1. The 2 other towers are associated with HF communications sites and are briefly described with the HF communications sites. Neither the exact type of microwave antenna nor its orientation could be determined from available photography.

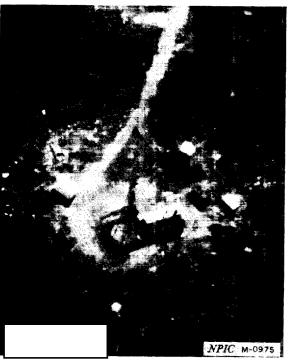
Murmansk Microwave Facility

The Murmansk Microwave Facility (Figure 2) is 13 nm northwest of Murmansk at 69-05-00N 032-34-00E and is designated 1 on Figure 1. This road-served facility consists of a microwave antenna on a mast with a control building adjacent to the base of the mast. There are 3 support buildings near the control building. No security fence is apparent on available photography.



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FIGURE 2. MURMANSK MICROWAVE FACILITY.



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FIGURE 3. SEVEROMORSK MICROWAVE FACILITY.

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Severomorsk Microwave Facility

The Severomorsk Microwave Facility (Figure 3) is 0.8 nm southeast of Severomorsk at 69-03-45N 033-28-00E and is designated 2 on Figure 1. This secured and road-served facility consists of a microwave antenna on a self-supporting tower and a control building adjacent to the base of the tower. There are also 5 support buildings within the secured area.

Olenegorsk Microwave Facility 1

The Olenegorsk Microwave Facility 1 (Figure 5) is 6 nm east of Olenegorsk and 1 nm northeast of Olenegorsk Airfield at 68-09-30N 033-32-20E and is designated 4 on Figure 1. This secured and road-served facility consists of a microwave antenna on a guyed mast with a control building adjacent to the base of the mast, and 1 support building. There are also 3 pole masts of unidentified configuration near the 25X1D control building.

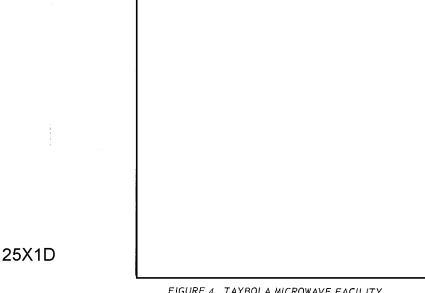


FIGURE 4. TAYBOLA MICROWAVE FACILITY.

Taybola Microwave Facility

The Taybola Microwave Facility (Figure 4) is 19.5 nm northeast of Olenegorsk at 68-27-00N 033-23-00E and is designated 3 on Figure 1. This secured and road-served facility consists of 2 microwave antennas on a single mast with the control building adjacent to the base of the support mast.

The Olenegorsk Microwave Facility 2 (Figure 6) is 8.5 nm northeast of Olenegorsk at 68-11-45N 033-48-40E and is designated 5 on Figure 1. This secured and road-served facility consists of a microwave antenna with the control building adjacent to the base of the support mast.

Olenegorsk Microwave Facility 2

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FIGURE 6. OLENEGORSK MICROWAVE FACILITY 2.

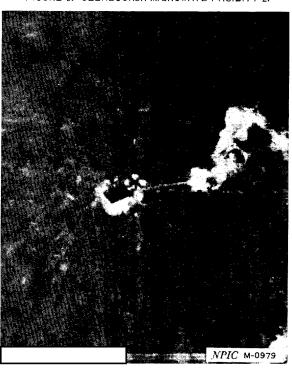


FIGURE 7. MONCHEGORSK MICROWAVE FACILITY.

Monchegorsk Microwave Facility

Monchegorsk Microwave Facility (Figure 7) is 1 nm southeast of Monchegorsk at 67-50-00N 032-58-30E and is designated 6 on Figure 1. The facility is road served and consists of a microwave antenna with a control building adjacent to the base of the supporting mast. No other buildings or security fence are apparent.

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FIGURE 8. AFRIKANDA MICROWAVE FACILITY.

Afrikanda Microwave Facility

The Afrikanda Microwave Facility (Figure 8) is 19 nm north of Kandalaksha at 67-25-30N 032-46-00E and is designated 7 on Figure 1. This secured and road-served facility consists of a microwave antenna with a control building adjacent to the base of the supporting mast. There is also I support building in the secured area.

- 3 -

Kandalaksha Microwave Facility 1

The Kandalaksha Microwave Facility 1 (Figure 9) is 1 nm east of Kandalaksha at 67-09-00N 032-27-30E and is designated 8 on Figure 1. This secured and road-served facility consists of a microwave antenna on a selfsupporting tower with a control building adjacent to the base of the tower. There are also 3 small support buildings in the secured area.



FIGURE 9. KANDALAKSHA MICROWAVE FACILITY 1.

Kandalaksha Microwave Facility 2

The Kandalaksha Microwave Facility 2 (Figure 10) is 13 nm north of Kandalaksha at 67-22-20N 032-28-30E and is designated 9 on Figure 1. This facility is road served and consists of 2 microwave antennas on a mast with the control building adjacent to the base of the mast. Two nearby buildings are probably support structures. No security fence is apparent.

MURMANSK AREA COMMUNICATIONS FACILITIES

The Murmansk area communications facilities, in addition to the previously described microwave facilities, consist of 3 HF facilities, 2 ionospheric scatter antenna facilities, and 2 MF vertical radiators including 1 which is associated with an HF facility.

As mentioned above in the section on microwave facilities, there are 2 microwave antennas associated with the HF facilities in the Murmansk area. The 2 ionospheric facilities were previously reported 2, 3/ and will not be repeated in this report.

Murmansk HF Communications Facility

The Murmansk HF Communications Facility (Figures 11 and 12) is secured and 6.5 nm northwest of Murmansk at 69-02N 032-51E and designated 10 on Figure 1. The facility contains

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at least 1 pair of double day/night rhombic antennas, 2 double rhombic antennas, 10 horizontal dipole antennas, 1 pair of tower-supported day/night horizontal dipole-type antennas, 1 microwave tower, and a central control building. In Table 1, the linear measurements and heights are considered to be accurate within plus or minus 5 percent and the azimuthal measurements

5 pole masts for an unidentified antenna configuration, a control building with 2 nearby cooling ponds, and 5 support buildings. In Table 2, linear measurements are accurate within plus 25X1D or minus 5 percent and azimuthal measurements are accurate within plus or minus

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Murmansk HF/MF Communications Facility

are accurate within plus or minus

Murmansk HF/MF Communications Facility (Figures 13 and 14) is 4 nm northwest of Murmansk at 69-00-40N 032-56-00E and is designated 11 on Figure 1. The facility consists of 3 rhombic antennas which are described in Table 2, 1 vertical radiator approximately 885 feet high with an associated transmitter building,

Murmansk HF Communications Receiving Facility

The Murmansk HF Communications Facility (Figure 15) is 6 nm south of Murmansk at 68-52N 033-04E and is designated 12 on Figure 1. The facility consists of at least 2 fishbone antennas, 1 microwave tower, and 2 buildings. In Table 3, the linear measurements are considered to be probably accurate within plus or minus 5 percent and the azimuthal measurements

are accurate within plus or 25X1D

Table 1. Murmansk HF Communications Facility Antennas

Designation	Туре	Major Axis (ft)	Minor Axis (ft)	Length of Side (ft)	End Polo Separation (ft)	Mast Height (ft)	Tilt Angle (deg)	Propagation Azimuth (deg)	
1	Rhombie			240	60				25X1D
2	Rhombic	430		240	55				20/(12
3	Rhombie	740		410	90 .				
4	Rhombic		265	235	55				
5	Dipole			185					
6	Dipole			80					
7	Dipole			75					
8	Dipole								25X1D
9	\mathbf{Dipole}								23/10
10	Dipole								
11.	Dipole			330					
12	Dipole			330					
13	Dipole								05V4D
14	Dipole								25X1D
15	Dipole								
16	Dipole					1			

Table 2. Murmansk HF/MF Antennas

Designation	Туро	Major Axis (ft)	Minor Axis (ft)	Length of Side (ft)	End Pole Separation (ft)	Pole Height (ft)	Tilt Angle (deg)	Propagation Azimuth (deg)	25X1D
$\begin{array}{c}1\\2\\3\end{array}$	Rhombic Rhombic Rhombic		435 335 350	270 390		Undet Undet	65 60		25X1D
			3,70	0.00		100	70		25X1D 25X1

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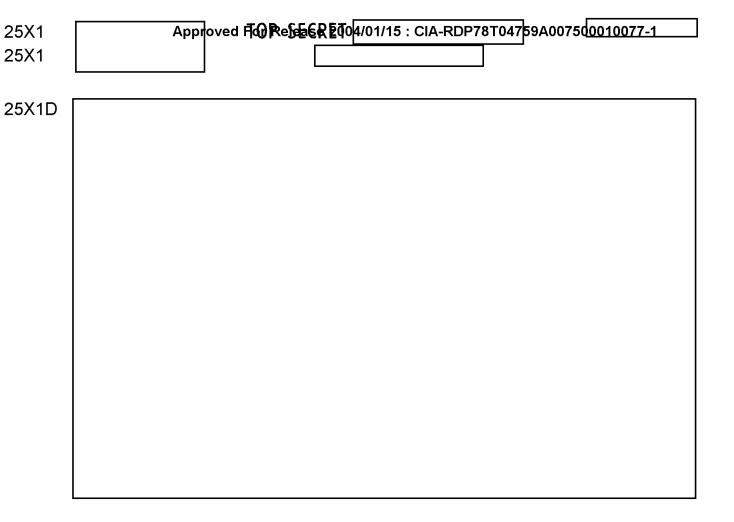


Table 3. Murmansk HF Communications Receiving Antennas

Designation	Type	Length (ft)	Width (ft)	Propagation Azimuth (deg)
1 2	Fishbone Fishbone		180 180	120/300

HIGH-FREQUENCY COMMUNICATIONS FACILITIES

Including a newly identified facility at the Taybola IRBM Complex, there are 5 high-frequency (HF) communications facilities in the Olenegorsk area. Four of these will be described briefly in this report. No significant changes are apparent in the fifth facility, designated 20 on Figure 1, which was previously described. 1/

IN THE OLENEGORSK AREA

Kitsa Hardened (Subsurface)

Communications Facilities

The Kitsa Hardened (Subsurface) Communications Facilities (Figures 16 and 17), designated 13 on Figure 1, consist of 2 separate installations: one located 1 nm southeast of Kitsa; and the other adjacent to Taybola Launch Site 1 at 68-29-00N 033-15-10E.

The larger of the 2 facilities is secured and consists of an earth-mounded building, a security building, and several communications

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Table 4. Kitsa Hardened (Subsurface) Communications Facility Antennas

Designation	Туре	Longth (ft)	Leg Length (ft)	Width (ft)	Height (ft)	Included Angle (deg)	Propagation Azimuth (deg)	
1 2 3	Fishbone Fishbone Vee		 Undet	85	50 50	 90		25X1D 25X1D
5 5	Vee Hardened (subsurface)	Undet	Undet	 Undet		90		
6	Hardened (subsurface)	Undet		Undet				

antennas which are atop a hill. The antennas include 1 hardened (subsurface) antenna, at least 1 mast-mounted probable VHF antenna, 2 HF fishbone antennas, and I large and I small quadrant (vee) antennas. An associated area is at the base of the hill and consists of a personnel bunker and several other buildings. The function of this facility is not readily apparent. Even though this facility is in the vicinity of the Taybola IRBM Complex, the signature of the earth-mounded control building is not typical of the other MRBM/IRBM command and control communications facilities. The earth-mounded building has the general appearance of several known air defense sector command and communications buildings, although the function of this building cannot be identified at this time.

The second facility is an earth-mounded building that is considered to be Soviet Rocket Forces (SRF) associated and also having the customary associated hardened (subsurface) It is located approximately 0.7 nm antenna. southeast of the large communications facility and is adjacent to the Taybola IRBM Launch Site 1. This is the smaller of the 2 facilities and consists of several masts of unidentified configuration adjacent to the earth-mounded building. It appears that this facility is SRF-associated and is a portion of or is the communications component which supports the Taybola IRBM Complex. In Table 4, the linear measurements are considered to be accurate within plus or $\min_{z \in X} 25X1D$ 5 percent and the azimuthal measurements accurate within plus or minus

Olenegorsk Regional HF Communications Receiving Facility

The Olenegorsk Regional HF Communications Receiving Facility (Figures 18 and 19) is 6 nm north of the town of Olenegorsk at 68-13-40N 033-17-30E and is designated 14 on Figure 1. This facility consists of 12 fishbone antennas, each of the 5-3-3-5 or 2 bay configuration. A control building and at least 12 support buildings are associated with this facility. In Table 5, the linear measurements are considered to be land25X1D accurate within plus or minus the azimuthal measurements are accurate within plus or minus 25X1D

Olenegorsk Regional HF Communications

Transmitting Facility

The Olenegorsk Regional HF Communications Transmitting Facility (Figures 20 and 21) is secured and is 1.5 nm south of the town of Next 3 Page(s) In Document Exempt

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25X1D

Table 5. Olenegorsk HF Receiving Antennas

Designation	Туре	T		
	, y C	Length (ft)	Width (ft)	${ m Propagation\ Azimuth} \ ({ m deg})$
1	Fishbone			
2	Fishbone			
3	Fishbone			
4	Fishbone			
ភ	Fishbone			
6	Fishbone			
7	Fishbone			
8	Fishbone			
9	Fishbone			
10	Fishbone			
1.1	Fishbone			
15	Fishbone			

Olenegorsk at 68-07-30N 033-17-00E and is designated 15 on Figure 1. The antenna field consists of 16 rhombic antennas which are arranged in day/night pairs and 1 control building. Also within the compound is a probable MF vertical transmitter mast high with an associated transmitter building. Within the support area are approximately 25 buildings of various functions and sizes. In Table 6, the linear measurements are approximations which are considered to be accurate within plus or minus 10 percent and the azimuthal measurements are probably accurate within plus or minus

Olenegorsk HF Communications Facility

The Olenegorsk HF Communications Facility (Figures 22 and 23) is 7 nm southwest of the town of Olenegorsk at 68-03N 033-02E and is designated 16 on Figure 1. This facility is under construction and consists of 1 probable control building and at least 16 clearings for rhombic antennas but none of the antenna masts have been identified on available photography. No support buildings have been identified in the area. In Table 7, the linear measurements are approximations and the azimuthal measurements are probably accurate within plus or minus 10 degrees.

Table 6. Olenegorsk HF Transmitting Antennas

Designation	Туре	Major Axis (ft)	Minor Axis (ft)	Length of Side (ft)	End Pole Separation (ft)	Pole Height (ft)	Tilt Angle (deg)	Propagatio Azimuth (deg)
1 2 3 4 5 6 7 8 9 10 1.1 12 13 14 1.5	Rhombic	840 510 825 480 900 505 790 520 960 590 835 580 900 490 885 485	330 340 545 565 355	455 300 475 280 495 290 450 300 525 330 475 325 500 275 495	0 0 70 55 	Undet 85 115 Undet Undet 90 Undet 90 Undet Undet Undet Undet Undet Undet 80 Undet 80	60 60 65 65 60 60	

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Table 7. Olenegorsk HF Antennas

Designation	Туре	Major Axis (ft)	Minor Axis (ft)	Length of Side (ft)	End Pole Separation (ft)	Pole Height (ft)	Tilt Angle (deg)	Propagation Azimuth (deg)	25X1D
1 2	Rhombie Rhombie	1450 980	590 360	780 520	Undet Undet	Undet Undet	70 70		25X1D
3 4 5	Rhombic Rhombic Rhombic	980 1020 1200	360 560 650	520 580 680	Undet Undet Undet	Undet Undet Undet	70		25X1D
6 7	Rhombie Rhombie Rhombie	780 900 950	280 330 540	415 480 550	Undet Undet Undet	Undet Undet Undet	70 70 60		
8 9 10	Rhombie Rhombie	930 930 850	340 340 480	495 480	Undet Undet Undet	Undet Undet Undet	70 60		
11 12 13	Rhombie Rhombie Rhombie	720 450 720	565 260 565	$410 \\ 240 \\ 410$	Undet Undet Undet	Undet Undet Undet	70		25X1D
13 14 15	Rhombie Rhombie	920 720	690 565	530 410	Undet Undet Undet	Undet Undet			25X1D
16 17	Rhombie Poss rhombie	780 Undet	580 Undet	440 Undet	Undet Undet	Undet Undet	Undet		

Murmansk MF Broadcast Facility

The Murmansk MF Broadcast Facility (Figure 24) is on the north edge of Murmansk at 68-59-10N 033-06-30E and is designated 17 on Figure 1. The facility is secured and consists of 1 guyed vertical radiator 520 feet high with an associated studio/control building. There are also 5 small buildings in the secured area. The height of the mast is considered to be accurate within plus or minus 30 feet.

LIEPAJA/SKRUNDA AREA COMMUNICATIONS FACILITIES

The Liepaja/Skrunda area communications electronic facilities consist of 8 HF communications sites which are designated 1-8 on Figure 25. Sites 2, 6, and 8 on Figure 25 are described

Sites designated 1, 3, 4, 5, and 7 on below. Figure 25 are associated with the MRBM complexes in the area and have been adequately reported previously. 4-8/

Priekule HF Communications Facility

The Priekule HF Communications Facility (Figure 26) is on the northeast edge of the town of Priekule, 19 nm southeast of Liepaja at 56-27-30N 021-38-00E and is designated 2 on Figure 25. The site was first observed under photography of 25X1D construction on The facility consists of 7 probable 25X1D horizontal dipole antennas, 1 control building, Tthis 25X1D and I support building. Since facility has been uninterpretable on photography.

Table 8. Prickyle HF Communications Antennas

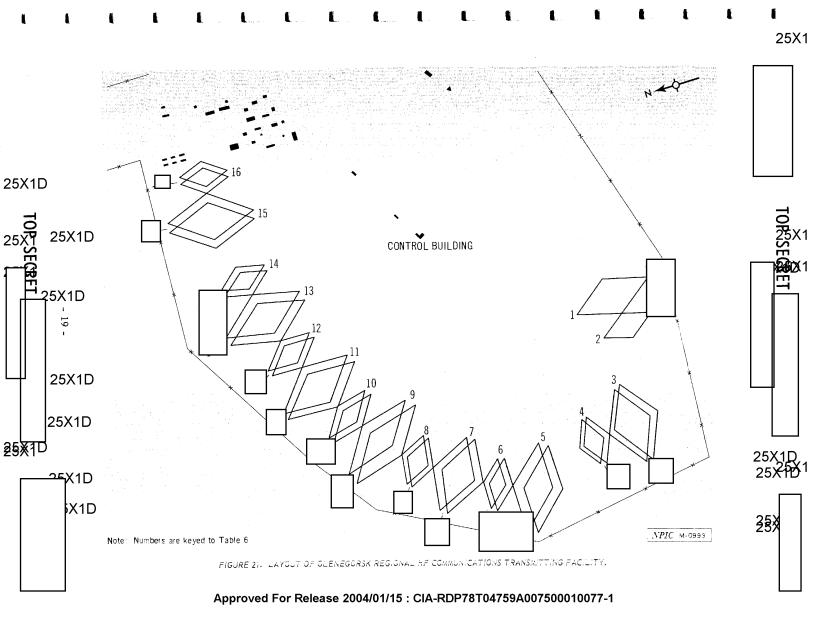
Designation	Туре	Length (ft)	Height (ft)	Propagation Azimuth (deg)	25X1D
1 2	Prob horizontal dipole Prob horizontal dipole Prob horizontal dipole	110 225	Undet Undet Undet		25X1D
3 4 5	Prob horizontal dipole Prob horizontal dipole	110	Undet Undet		25X1D
6 7	Prob horizontal dipole Prob horizontal dipole		Undet Undet		25X1D

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Approved For Release 2004/01/15 : CIA-RDP78T04759A007500010077-1 25X1 TRANSMITTER BUILDIN CONTROL BUILDING - 18 -25X1 25X1 FIGURE 20. OLENEGORSK REGIONAL HF COMMUNICATIONS TRANSMITTING FACILITY. 25X1D

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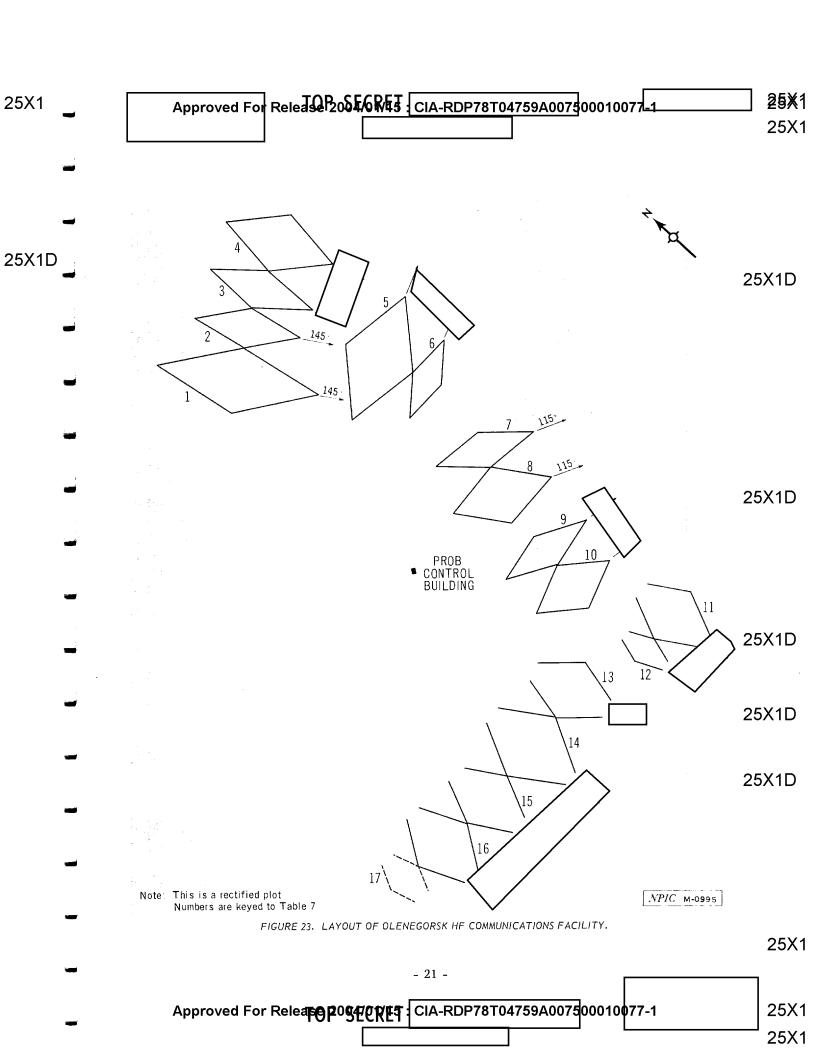
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FIGURE 22. OLENEGORSK HF COMMUNICATIONS FACILITY.



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Meskuiciai HF Communications Site

The Meskuiciai HF Communications Site (Figure 27) is 3.5 nm northwest of the town of Meskuiciai at 56-06-30N 023-23-00E and is designated 6 on Figure 25. The facility consists of 4 rhombic antennas which are arranged in 2 day/night pairs, 1 control building, and 5 support buildings. In Table 9, the linear measurements are considered to be accurate within plus or minus 5 percent and the azimuthal measurements are accurate within plus or minus 5 degrees.

Jelgava HF Communications Site

The Jelgava HF Communications Site (Figure 28) is approximately 1 nm south of the town of Jelgava at 56-37-20N 023-41-30E and is designated 8 on Figure 25. The facility is secured and consists of 6 central fed horizontal dipole antennas, 1 control building, and 3 support buildings. The site was first observed on

Table 10, the linear dimensions are considered to be accurate within plus or minus 5 percent and the azimuthal measurements are accurate within plus or minus 5 degrees.

In

In Table 8, the linear dimensions are considered to be accurate within plus or minus 5 percent and the azimuthal measurements are accurate within plus or minus 5 degrees.

Table 9. Meskviciai HF Communications Antennas

Туре	Major Axis (ft)	Minor Axis (ft)	Length of Side (ft)	Pole Height (ft)	Tilt Angle (deg)	Propagation Azimuth (deg)
Rhombic			420	Undet	55	
\mathbf{R} hombic	420	280		Undet	55	
Rhombic				Undet	55	
Rhombic	710	485	430	Under	55	
	Rhombic Rhombic Rhombic	Type Axis (ft) Rhombic Rhombic Rhombic	Type	Type	Type	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

Table 10. Jelgava HF Communications Antennas

Designation	Туре	Length (ft)	Height (ft)	Propagation Azimuth (deg)
1.	Dipole	130	Undet	5/185
2	Dipole	90	Undet	5/185
3	Dipole		Undet	
4	Dipole		Undet	
ő	Dipole		Undet	
6	Dipole	1 1	Undet	

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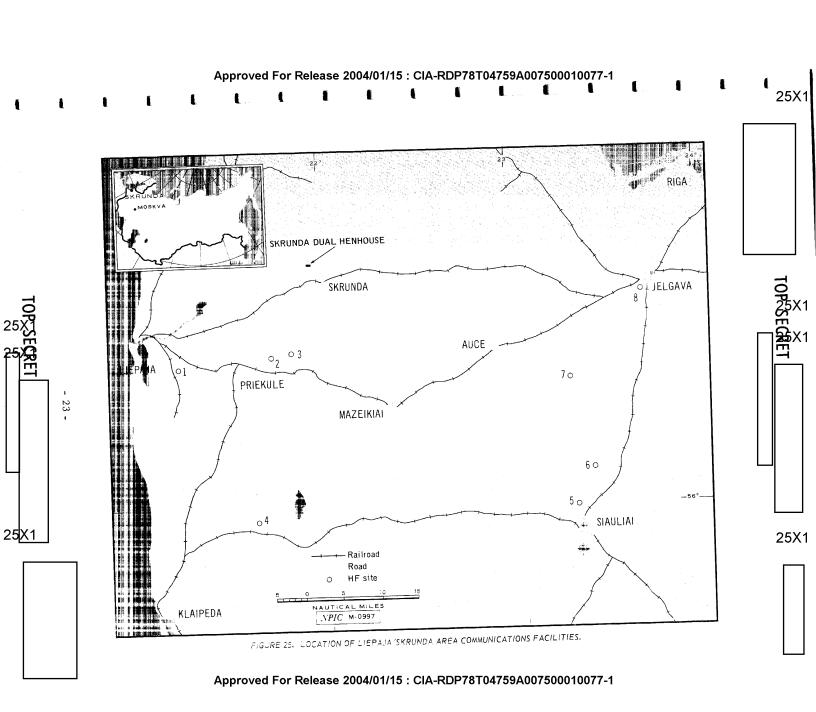
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	REFERENCES	
MAPS OR CHARTS		
ACIC series, scale	(:1,000,000	
DOCUMENTS		
1. NPIC.	Communications Facility, Olenegorsk, USSR, Jan 65 (TOP SECRET	
2. NPIC.	Murmansk Probable Ionospheric Scatter Facility 1, USSR, Sep 67 (TOP SECRET	
3. CIA.	Communications Scatter Antennas, Murmansk, USSR, Dec 65 (TOP SECRET	
4. NPIC.	Paplaka MREM Launch Complex Communications Facility, USSR. Apr 67 (TOP SECRET	
5. NPIC.	New HF Communications Facilities at Soviet MRBM/IRBM Launch Arcas, Aug 64 (TOP SECRET	
6. NPIC.	Saleikiai MRBM Launch Complex Communication Facility, USSR, Apr 67 (TOP SECRET	
7. NPIC.	Siguliai SRF Probable Regional Headquarters Facility, USSR, May 67 (TOP SECRET	
8. NPIC.	, UF Communications Facilities at Societ MBBM and IRBM Complexes (Update), Jan 67	
(TOP SECRET		
REQUIREMENT		
NSA/SOC/R62-67		

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